Parisharam (2024)

Relations and Functions

DPP-05

1. If $f(x)=\log\left(\frac{1+x}{1-x}\right)$, then $f\left(\frac{3x+x^3}{1+3x^2}\right)$ is equal to:

(1) $(f(x))^3$ (2) $(f(x))^2$

(3) $3f(x)$ (4) $2f(x)$

2. Function $f:N\to N, f(x)=2x+3$ is:

(1) One-one onto (2) One-one into

(3) Many-one onto (4) Many –one into

3. The function $f:R\to R$ defined by $f(x)=(x-1)(x-2)(x-3)$ is:

(1) One-one but not onto

(2) Onto but not one-one

(3) Both one-one and onto

(4) Neither one-one nor onto

4. If $A=\{a,b,c\}$, then total number of one-one onto functions which can be defined from A to A is:

(1) 3 (2) 4

(3) 9 (4) 6

5. If $f:R\to R$, then $f(x)=|x|$ is:

(1) One-one but not onto

(2) Onto but not one-one

(3) One-one and onto

(4) None of these

6. A function f from the set of natural numbers to integers defined by $f(n)=\begin{cases}\frac{n-1}{2}, \text{when } n \text{ is odd}\\ -\frac{n}{2}, \text{ when } n \text{ is even}\end{cases}$, is:

(1) One-one but not onto

(2) Onto but not one-one

(3) One-one and onto both

(4) Neither one-one nor onto

7. $f(x) = x + \sqrt{x^2}$ is a function from R $\to$ R then $f(x)$ is:

(1) Injective (2) Surjective

(3) Bijective (4) None of these

8. What will be the type of function; when an even function in multiplied by an odd functions?

(1) Even Function

(2) Odd Function

(3) Neither even nor odd

(4) Cannot say

9. If $f: A \to B$ is one one and g : $B \to C$ one one then what can we say gof

(1) One One from A to C

(2) One One from A to B

(3) One One from B to C

(4) None

10. Consider the following statements:

I. $f:[0,2\pi]\to[-1,1]$ defined by $f(x)$ = sin x is many-one and onto

II. $f:\left[0,\frac{\pi}{2}\right]\to[-1,1]$ defined by $f(x)$ = sin x is one-one and into

III. $f:[0,\pi]\to[-1,1]$ defined by $f(x)$ = sin x is many-one and into

IV. $f:\left[-\frac{\pi}{2},\frac{\pi}{2}\right]\to[-1,1]$ defined by $f(x)$ = sin x is bijective function

Which of the above statements is/are correct?

(1) I and II only

(2) I, II and IV only

(3) II, III and IV only

(4) All are correct

Note: Kindly find the Video Solution of DPPs Questions in the DPPs Section.

Answer Key

1.	**(3)**	**6.**	**(3)**
2.	**(2)**	**7.**	**(4)**
3.	**(2)**	**8.**	**(2)**
4.	**(4)**	**9.**	**(1)**
5.	**(4)**	**10.**	**(4)**

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